REMARKS

This amendment follows the withdrawal of this case from appeal and the issuance of a nonfinal office action in which claims 13 to 23 have been rejected under 35 USC 112, second paragraph and 35 USC 103(a). There is a rejection also under 35 USC 112, first paragraph that will be dealt with below. Applicants reserve the right to restore the appeal at an appropriate time.

1. Claim 13 has been amended to change the wording slightly although the original wording of claim 13 is believed to be accurate. Claim 13 now makes clear that a power line is connected by a motor control circuit to the motor.

The Examiner has asked how the conductor is associated with the power line and the motor control circuit. In FIG. 3, the conductor at 17a is connected between the power connector 14 which supplies the current and the line 16 running to the motor. The motor control section is represented diagrammatically at 8 and includes the wire segment 17a. In FIG. 4 which shows a circuit in greater detail, the "power line" is all of the heavy line structure in FIG. 4 between the current source 30 and the motor 32. It thus includes the thyristor circuit and the rectifiers. One side of that line goes to the transistors 41, 42 which control the firing of the thyristor 35. Thus the conductor 38 connects the power line which is all of the heavy conductor structure illustrated in FIG. 4 with the motor control circuit which includes the transistor circuit which has been illustrated.

It is the segment 38 of that line which has its voltage drop measured and, of course, that segment will have a definite resistance. It is from that voltage drop that a current draw is calculated.

The Examiner has stated that claim 14 appears to be inaccurate since the conductor 38 does not connect the power line 31 to the control circuit. The Examiner is here using a very narrow definition of what a power line between a source 30 and a motor 32 is. The ordinary skilled worker in the art would have no problem in understanding that the power line supplying the motor at 32 is the entire thyristor circuit and rectifier bridge arrangement shown in FIG. 4 so that the conductor 38 does indeed connect the power line 31 to the control circuit.

As to claim 18, the Examiner has not stated with any particularity where he finds a problem. The electric motor 32 has a power line connected thereto in the form of the thyristor circuit 35, 36 connected across the rectifier bridge 34 via lines 31 to the source 30.

It has a motor control circuit connected to the power line as thus defined, *inter alia*, via the segment 38 and the rectifier 34 and has been represented at 39 and electronically controls the pump assembly through the motor. The system has a pump 33 driven by said motor 32 and the system has means, namely, the microprocessor 37 for measuring a voltage drop across at least the portion 38 of the conductor having a definite resistance and connecting the power line consisting of the system of the thyristor

35, resistor 36 and rectifier bridge 34 with the motor control circuit 39 and calculating the current drawn from the voltage drop.

Applicant can find nothing in the dependent claims which contradicts or is at variance with this understanding as to how the invention works.

The rejection under 35 USC 112, second paragraph, must be withdrawn.

2. The rejection of claims 13 to 23 under 35 USC 112, first paragraph, is not understood and is not correct if understood. The Examiner finds it difficult to understand how FIGS. 2 and 3 are associated and interrelated with FIG. 4. FIGS. 2 and 3 are diagrammatic views which show the principles of the invention and these principles are perfectly clear. FIG. 2 shows that the motor circuit may be on a board 10 and can have a plug contact 11 which can be connected in the power line running to the winding of the motor. When that is the case a wire segment 13 can be used as the wire segment for the current measurement. That is, of course, if the segment is not found in the motor control section like the segment 17a in FIG. 3. FIG. 4 shows the latter type of circuit where the segment is in the motor control section in greater detail. An ordinary skilled worker in the art would have no difficulty in understanding this.

Applicant also fails to understand why the Examiner is concerned with the sensitivity of the temperature sensor when it is used for measuring the sensor of the conductor segment 38. There

is no doubt that the conductor segment 38 is not the only conductor which produces heat in the system. However, it is the only conductor whose temperature is to be known with accuracy and whose temperature might be measured to insure accuracy in the measurement of the voltage drop and thus the motor current. If all wires in the system are at the same temperature, a more global temperature measurement could be made but since the voltage drop of a resistor is a function of temperature, everything else being understood, there is no problem in correcting the voltage drop for temperature.

3. Applicant does not agree with the Examiner's position with respect to the prior art but does not need to repeat the substantive portions of the appeal brief and the arguments provided for patentability over the art. The Examiner has stated that **Nakanishi** uses current sensors 21 and 22 for measuring the current flowing through the motor without using the resistor claimed.

The heart of the invention here is the omission of these sensors. There is no teaching in **Nakanishi** or the admitted prior art which would suggest that the current sensors 21 and 22 be omitted or that a voltage drop could be tapped from the lines around which these current transformers are provided as claimed.

The Examiner has no evidence that it would have been obvious for one of ordinary skill in the art to measure the current flowing through a wire segment by any way other than the **Nakanishi** method (current transformer) and he has not said why that should be obvious. The Examiner's statements as to what would be obvious are

unfounded undocumented conclusions without basis in direction, incentive, motivation or suggestion in one of the references of record which could lead to incorporation of the features of one in the other. There is no such evidence in this case. The Examiner's attention is directed to Ex Parte Leavell, 212 USPQ 763 where the Board made it crystal clear that the legal conclusion of obviousness must have a solid evidentiary base. The fact that the Examiner has not been able to find Applicants approach in the art and has had to rely on **Eastman** which must provide a high resistance resistor for tapping the voltage is proof that the art does not suggest the invention since the invention is not the use of the high resistance resistor of **Eastman**. Rather it is the use of an ordinary wire or conductor as a sensor in a way which is not taught in either reference or the applied prior art and that is not obvious from any of the references in the case or the admitted prior art or anything the Examiner has said.

The claims are allowable and an early notice to that effect is earnestly solicited.

Respectfully submitted,
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Encls: Marked up Claim 13

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Claims 13 - 23.

13. A method of determining a current draw of a pump driven by an electric motor [having] a power line [and] being connected by a motor-control circuit [connected] to said [power line] motor, said method comprising the steps of:

(a) measuring a voltage drop across at least a portion of a conductor having a definite resistance and connecting said power line with said motor-control circuit; and

(b) calculating said current draw from said voltage drop.

14. The method defined in claim 13 wherein said portion of said conductor having said resistance is a piece of current supply line connecting the power line with said motor-control circuit.

15. The method defined in claim 13 wherein the voltage drop is measured and the current draw is calculated from said voltage drop by a computing unit forming part of said motor-control circuit.